Before the
Federal Communications Commission
Washington, D.C. 20554

FCC 91-337

38266

In the Matter of	)	
Advanced Television Systems	)	
and Their Impact upon the	)	MM Docket No. 87-268
Existing Television Broadcast	)	
Service	)	

NOTICE OF PROPOSED RULE MAKING

Adopted: October 24, 1991 ; Released: November 8, 1991

Comment Date: December 20, 1991
Reply Comment Date: January 20, 1992

By the Commission: Chairman Sikes issuing a separate statement.

I. BACKGROUND

1. This Notice of Proposed Rule Making (Notice) proposes policies and rules for implementing advanced television (ATV) service in this country.[1] It is the fourth in a series of Commission actions designed to refine and

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[1] ATV refers to any television technology that provides improved audio and video quality or enhances the current television broadcast system. The existing broadcasting system is referred to as NTSC, after the National Television Systems Committee, an industry group established in 1940 to develop technical standards for television broadcasts and which reconvened in 1950 to develop technical standards for adding color to the monochromatic standards.

The term "ATV" embraces both High Definition Television (HDTV) and Enhanced Definition Television (EDTV). HDTV systems aim to offer approximately twice the vertical and horizontal resolution of NTSC receivers and to provide picture quality approaching that of 35 mm film and audio quality equal to that of compact discs. "Simulcast" HDTV systems use design principles independent of existing NTSC technology. They are not receivable on conventional NTSC television sets. EDTV refers to systems that provide limited improvements over NTSC. EDTV signals may be receivable on current NTSC television receivers, in either the current 4:3 standard or 16:9 "letter box" aspect ratio formats. (The aspect ratio of a television picture is the width of the display relative to its height.) As we have stated, we do not envision adopting an EDTV standard, if at all, prior to reaching a decision on an HDTV standard. First Report and Order, 5 FCC Rcd 5627, 5627 (1990) (First Order).

articulate a regulatory approach for ATV.[2]

2. In the Second Inquiry, we tentatively adopted certain principles that continue to guide our policies regarding ATV. These tentative decisions are that: 1) broadcast use of ATV technology would benefit the public; 2) the public can benefit from ATV technology most quickly if current broadcasters are permitted to implement ATV; 3) spectrum needed for ATV broadcasts will be obtained from the spectrum currently allotted to broadcast television; 4) current service to NTSC compatible receivers must continue, at least during a transition period; 5) only systems that utilize 6 MHz or less in broadcasting an ATV signal will be authorized; and 6) it is in the public interest not to retard the independent introduction of ATV in other services or on non-broadcast media.[3] In addition, in our First Order in this proceeding, we decided that a "simulcast" HDTV system -- i.e., a system that employs design principles for ATV service independent of the existing NTSC technology, and that transmits the increased information of an ATV signal in a standard 6 MHz channel as used in the current television plan -- will allow for ATV introduction in the most non-disruptive and efficient manner.[4]

3. In 1987 we established the Advisory Committee on Advanced Television Service (Advisory Committee) to study and make recommendations on the technical, economic and public interest issues pertaining to the introduction of ATV.[5] The Advisory Committee has produced four Interim Reports on issues relating to ATV. It is currently directing the testing of six proponent systems and will ultimately make a recommendation to the Commission regarding their performance.[6]

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[2] See Notice of Inquiry, 2 FCC Rcd 5125 (1987) (First Inquiry); Tentative Decision and Further Notice of Inquiry, 3 FCC Rcd 6520 (1988) (Second Inquiry); First Order, supra.

[3] Second Inquiry, 3 FCC Rcd at 6521.

[4] See infra Section V.A.

[5] The Advisory Committee is comprised of industry leaders of diverse viewpoints. First Order, 5 FCC Rcd at 5627.

[6] The six systems are proposed by four proponents: Advanced Compatible Television (ACTV) and Advanced Digital Television (ADTV) proposed by the Advanced Television Research Consortium; Narrow MUSE proposed by the Japan Broadcasting Corporation (NHK); DigiCipher and the ATVA Progressive System proposed by the American Television Alliance; and Digital Spectrum Compatible HDTV proposed by Zenith Electronics Corporation/AT&T. ACTV is an EDTV system, Narrow MUSE is an analog system, and the remaining four are digital systems. Fourth Interim Report of the FCC Advisory Committee on Advanced Television, at 4 (Fourth Interim Report). In November 1990, the Advisory Committee and the FCC entered into agreements with the Advanced Television Test Center (Test Center) and the Cable Television Laboratories (CableLabs), whereby the Test Center and CableLabs will serve as the testing fora for the proponent ATV systems. Additional video tests will be conducted at the Advanced Television

4. This Notice proposes a tentative plan for ATV terrestrial broadcast implementation. We seek comment on the following fundamental aspects of this plan: (1) who should initially be eligible for ATV frequencies; (2) how we should allot and assign ATV channels to eligible applicants; (3) how we should resolve certain spectrum issues involving the noncommercial reserve, low power and translator stations, and broadcast auxiliary services; (4) how we should regulate the "conversion" from NTSC to ATV; and (5) whether we should require some transitional simulcasting in ATV and NTSC during the conversion period. We discuss each of these questions and proposed solutions in turn.

II. ELIGIBILITY AND RELATED ISSUES

A. Initial Eligibility

5. As we have previously stated, our objective in this proceeding is to effect a major technological improvement in television transmission by allowing broadcasters to implement ATV.[7] Our goal is "not to launch a new and separate video service."[8] Thus, in order "to preserve and improve existing broadcast service and the benefits that this service delivers to the public," we have generally proposed restricting initial eligibility for ATV frequencies to existing broadcasters.[9]

6. We continue to believe that the public interest would best be served by limiting the pool of initial ATV applicants to existing broadcasters. First, existing broadcasters have invested considerable resources and expertise in the present system and represent a large pool of experienced talent. Through their support of the Test Center, they are also actively supporting the testing of ATV technologies.[10] As we have previously stated, given the risks inherent in ATV, existing broadcasters' continued involvement appears to be the most practical and expedient way to bring

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Evaluation Laboratory (ATEL) in Ottawa, Canada, and audio tests will be conducted by Westinghouse Science and Technology Center. Testing is expected to be completed by early summer of 1992.

This Notice does not address questions concerning the technical standard for terrestrial ATV service. That issue will be covered in a subsequent Notice of Proposed Rule Making.

[7] Second Inquiry, 3 FCC Rcd at 6537.

[8] Second Inquiry, 3 FCC Rcd at 6537.

[9] Second Inquiry, 3 FCC Rcd at 6537-38.

[10] See generally Second Interim Report of the FCC Advisory Committee on Advanced Television Service at 3 (April 26, 1989) (Second Interim Report).

improved ATV television service to the American public.[11] Second, conversion to ATV represents a major change in broadcast technology nationwide. We believe that it would increase the potential for disruption to the viewing public if a technological change of this magnitude were accompanied by a change in the ownership structure of the entire television broadcasting industry. Initially restricting eligibility for ATV frequencies to existing broadcasters thus would appear to serve the public interest by hastening and smoothing the transition to ATV transmission. Finally, we stress that our award of an additional 6 MHz channel to existing broadcasters would be interim in nature only, so that broadcasters would have to surrender one of their 6 MHz channels after "conversion" to ATV.[12]

7. It is still our tentative view[13] that restricting eligibility to existing broadcasters is legally permissible and consistent with the Supreme Court's decision in Ashbacker Radio Corp. v. FCC.[14] In that case, the Supreme Court held that the Commission is required under Section 309 of the Communications Act[15] to give comparative consideration to all bona fide mutually exclusive applications. In so holding, however, the Court did not preclude the Commission from establishing threshold qualification standards that must be met before applicants are entitled to comparative consideration.[16] Indeed, in United States v. Storer Broadcasting Co.,[17] the Court held that, in the context of a rule making proceeding, the Commission may establish eligibility standards that applicants must meet in order to receive comparative consideration.[18] Consistent with case law, we have restricted eligibility on many occasions to particular classes or entities. As an example, the telephone industry's resources and expertise led us to restrict eligibility for a block of cellular telephone spectrum to wireline

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11 Second Inquiry, 3 FCC Rcd at 6537. See generally United States v. Storer Broadcasting Co., 351 U.S. 192 (1956) (hearing requirement of 47 U.S.C. § 309 does not limit the Commission's power to promulgate rules setting license eligibility criteria).

12 See infra Section V.B.

13 Second Inquiry, 3 FCC Rcd at 6537-38.

14 326 U.S. 327 (1945).

15 47 U.S.C. § 309.

16 Ashbacker Radio Corp. v. FCC, 326 U.S. at 333 n. 9 (suggesting permissibility of cut-off rules).

17 351 U.S. at 202-205.

18 See also Public Utilities Commission of California v. FERC, 900 F. 2d 269 (D.C. Cir. 1990) (Ashbacker doctrine does not apply to two-track approach for certification applications).

carriers for a period of years.[19] We have also held that in appropriate circumstances we can adopt threshold standards that limit eligibility to a class of one.[20]

8. We propose to include in the class of existing broadcasters who would initially be eligible for ATV channels: (1) all full-service television broadcast station licensees, (2) permittees authorized as of the date of adoption of this Notice, and (3) all parties with applications for a construction permit on file as of the date of adoption of this Notice who are ultimately awarded full-service television broadcast station licenses.[21] We believe that defining the class in this fashion will best serve the public interest. Having determined that incumbent broadcasters would be eligible initially for ATV frequencies, we have delineated the class of initially eligible ATV applicants to include these incumbent broadcasters, as well as those parties that are in the process of obtaining NTSC authorizations or licenses and have invested resources in reliance on our existing licensing scheme. We ask interested parties to comment on this proposal. We also seek comment on whether we should include within the class of eligible ATV applicants, those parties who have a petition for a new television allotment pending on the adoption date of this Notice, whose allotment petition is granted, and who are subsequently awarded a construction permit to use the NTSC channel. Parties with such pending allotment petitions may have already expended significant resources in prosecuting their petitions. We are thus of the tentative view that we should also permit these parties, should they

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19 An Inquiry Into the Use of the Bands 825-845 MHz and 870-890 MHz for Cellular Communications Systems; and Amendment of Parts 2 and 22 of the Commission's Rules Relative to Cellular Communications Systems, 86 FCC 2d 469, 483 (1981), modified, 89 FCC 2d 48, 69-77 (1982) (further limiting duration of set aside), further modified in Amendment of the Commission's Rules to Allow the Selection from Among Mutually Exclusive Competing Cellular Applications Using Random Selection or Lotteries Instead of Comparative Hearings, 98 FCC 2d 175, 194-98 (1984) (reaffirming set aside, but redefining end of set aside period in each cellular market), modified on other grounds, 101 FCC 2d 577 (1985).

20 See, e.g., Amendment of the Commission's Rules Regarding Modification of FM and TV Authorizations to Specify a New Community of License, 4 FCC Rcd 4870 (1989), recon. granted in part and denied in part, 5 FCC Rcd 7094 (1990); Establishment of Procedures to Provide a Preference to Applicants Proposing an Allocation for New Services, 6 FCC Rcd 3488 (1991) (adopting rules giving a dispositive "pioneer's preference" for new or innovative communications service).

21 For the sake of brevity, we hereinafter refer to the class of those initially eligible for ATV frequencies as "existing broadcasters" or "existing NTSC licensees."

attain permittee status, to participate fully in the transition to ATV.[22] If we do not award such a party a television construction permit as a result of a subsequent comparative case, we ask whether the actual grantee in such a proceeding (even though it had no pending petition or application on file as of the adoption of this Notice)[23] should be entitled to an ATV assignment. We also seek comment on whether, once the initial class of eligible applicants has been assigned ATV frequencies, we should attempt to assign an ATV frequency to parties outside this class who were authorized to construct NTSC facilities in the interim period after adoption of this Notice.[24]

9. In order to ensure a smooth transition to ATV technology, we also propose to suspend application of the television multiple ownership rules, 47 C.F.R. § 73.3555, for ATV spectrum on a limited basis. These rules prohibit the award of licenses for TV broadcast stations that result in an applicant directly or indirectly owning, operating or controlling (1) two TV stations with overlapping grade B contours, (2) more than 14 television stations, or 12 stations that are not minority controlled, nationwide or (3) television stations which have an aggregate national audience reach exceeding 30 percent, or which reach exceeds 25 percent and are not minority-controlled.[25] We propose to permit existing licensees that are awarded an additional ATV channel to hold both their NTSC and ATV licenses, even though their signals overlap, and to permit group owners to hold both NTSC and paired ATV channels, even though nationwide ceilings are exceeded, until such time as existing licensees are required to convert to ATV service exclusively.[26] We seek comment on this proposal.

B. Unrestricted Eligibility

10. Once ATV allotments for existing broadcast operations are made, we see no reason to continue limiting eligibility for ATV frequencies. We thus propose at that point to permit any qualified party to file a petition for rulemaking to modify the ATV allotment table so as to add additional ATV

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22 There are also parties seeking to obtain new licenses and who have requests pending for waiver of the current freeze on television broadcast applications in major markets. We are of the tentative view that such parties would be eligible for ATV channels, if their waiver requests are granted, and if they are subsequently awarded NTSC authorizations.

23 For example, it is possible that a party with an allotment petition pending as of the date of this Notice may subsequently succeed in having a new channel allotted to a community, apply for that channel, and then be successfully challenged by another applicant for that channel.

24 We are proposing to cease issuing new NTSC licenses once the assignment of ATV channels to the class of initially eligible applicants is complete. See infra Section V.A.

25 47 C.F.R. § 73.3555 (a)(3), (d)(1), (d)(2).

26 See infra Section V.

channels where they are technically feasible.[27] We also propose to permit any qualified applicant, not just existing broadcasters, to apply for an ATV frequency after it is determined that a given NTSC licensee has failed to construct an ATV facility or failed to apply for authority to construct within the required time, and is thereby leaving an allotment vacant.[28] Similarly, ATV licensees would be subject to competing applications filed during the appropriate renewal window. We propose to issue ATV licenses for periods concurrent with the license of the associated NTSC station.[29] In this way, once the transition to ATV technology had been completed, eligibility for ATV frequencies ultimately would become unrestricted. We seek comment on these proposals for opening up eligibility once initial ATV allotments are made.

C. Application and Construction Periods

11. In keeping with our goal of expediting delivery of ATV service to the American public, we propose to limit the period of time during which existing broadcasters would have the right to apply for a particular ATV channel. Specifically, we propose to give existing broadcasters three years from the time that an ATV allotment table is adopted to apply for a construction permit for an ATV channel. After that time, existing broadcasters would forfeit their priority status, and ATV channels would be opened to all qualified applicants. We tentatively conclude that three years is long enough to permit stations to arrange any necessary financing and to plan their ATV facilities, but is not so long as to unduly compromise our desire to minimize delays in bringing ATV service to the public. We seek comment on this proposal.

12. We also tentatively conclude that we should award existing broadcasters an additional license for the ATV channel, in lieu of treating the addition of an ATV channel as a major modification to the NTSC license. Dual licensing would simplify enforcement and administration of our rules. We seek comment on this tentative conclusion. We also seek comment, however, on whether there may be competing benefits in treating the addition of an ATV channel as a major modification to an existing broadcaster's license.

13. In the event we adopt a dual licensing scheme, we would propose not to permit an ATV license awarded to an existing NTSC licensee to be transferred independently of the associated NTSC license. As we previously stated, we are awarding existing broadcasters an additional broadcast channel to permit them to implement the technological advances that ATV can bring to the American public. Once this technological transition is accomplished, we

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[27] We cannot at this time estimate the number of such additional allotments which may be possible, although they would be most likely to occur in mid-size and smaller markets.

[28] See infra Section II.C, V.A.

[29] See infra Section II.C. Cf. 47 C.F.R. § 74.15(b) (auxiliary broadcast licenses issued for a period running concurrently with the license of the associated broadcast station with which it is licensed).

expect that broadcasters will surrender one of these two channels. It would defeat both the primary purpose of restricting initial eligibility -- to permit television broadcasters to implement a major technological improvement -- as well as jeopardize our plan for the most efficient use of spectrum if we were to permit the independent transfer of one or the other of an existing broadcasters' NTSC and ATV licenses.[30] We seek comment on these initial views. We also tentatively conclude that (1) an applicant for an ATV construction permit should lose its initial eligibility if its NTSC license is not renewed or is revoked while its ATV application is pending,[31] and (2) if either the broadcaster's NTSC or ATV license is revoked or not renewed, the remaining license would be automatically revoked. We seek comment on these tentative conclusions.

14. Our rules currently require that holders of broadcast station construction permits either build their facilities within two years from the date of issuance of the permit, or forfeit the permit.[32] We believe that a similar construction time limit is necessary in the case of ATV to ensure that assigned spectrum does not lie fallow for an inordinate period of time. Such a restriction would appear to apply logically to existing broadcasters that receive ATV permits, as well as to other qualified parties that may later receive ATV permits. We thus seek comment on whether we should extend our existing rules regarding the period of construction and forfeiture of construction permits to ATV permittees. In so doing, we note that preliminary information appears to indicate that a three-year application and two-year construction period will permit broadcasters sufficient time to begin transmission in ATV in the vast majority of cases.[33] We also ask interested

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30 See supra Section II.A. Where an existing broadcaster forfeits initial eligibility by failing to apply for or construct an ATV facility within the required time, however, other public interest considerations necessitate opening up eligibility for what would have been an associated ATV channel to a different party. See supra Section II.B.

31 Cf. 47 C.F.R. § 74.600 (auxiliary broadcast license issued only to a television broadcast station, network, low power or television translator station).

32 47 C.F.R. §§ 73.3598, 73.3599.

33 A preliminary study submitted by CBS projects that stations in smaller markets will be slower to construct ATV facilities than those in larger markets. The study projects that stations in the ten largest markets will begin building an ATV facility in Year 1, and that by Year 5 stations in all markets, and serving 98% of all television households, will have begun actual construction of ATV facilities. High Definition Television: Transition Scenario for TV Stations: A CBS Work-in-Progress (Oct. 23, 1990 Preliminary Results), at Figure 11 (CBS Study), Attachment B to Implementation Subcommittee, Fourth Interim Report to the FCC Advisory Committee on Advanced Television Service (IS-0017) (Mar. 7, 1991) (Implementation Subcommittee Fourth Report).

parties to comment on whether we should apply our policies regarding extensions of NTSC construction permits to ATV permits, including the policy that inadequate finances will not justify an extension of time.[34]

III. INITIAL ASSIGNMENT OF ATV CHANNELS

15. The Second Inquiry explored in general terms the various means by which we might assign particular ATV channels to qualified applicants.[35] Based on the additional insights we have since gained regarding ATV technologies, and the approach towards ATV implementation we are developing herein, we seek additional comment on the general policies that should guide our resolution of this issue and on the specific means by which we might assign ATV frequencies.

A. Assignment of Particular Channels

16. In keeping with our current policy of allotting broadcast channels to particular communities, we propose to allot ATV channels to each community of license currently listed in the Table of Allotments for television frequencies.[36] For purposes of administering this proceeding, we propose to treat all ATV channels as equivalent. Provided that there are sufficient channels available to accommodate all existing licensees, applications for ATV channels within a market will not be considered mutually exclusive.[37] We

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For the convenience of commenting parties, all reports of the Commission staff and of the Advisory Committee, its subcommittees, or other subgroups, as well as other unpublished papers cited herein, are listed in Appendix B. All documents in Appendix B have been made part of the docket in this proceeding and are available in the Commission's public reference room. Copies are also available, for a fee, from the Commission's independent copy contractor, Downtown Copy Center, 1114-21st Street, NW, Washington, D.C. 20036, (202) 452-1422.

[34] Revision of Application for Construction Permit for Commercial Broadcast Station (FCC Form 301), 50 RR 2d 381, 382 (1981). See generally Amendment of Section 73.3598 and Associated Rules Concerning the Construction of Broadcast Stations, 102 FCC 2d 1054 (1985).

[35] Second Inquiry, 3 FCC Rcd at 6538-39.

[36] As is currently the case, we would retain the right to modify the Table of Allotments containing the new ATV allotments if changed circumstances necessitate such a revision.

[37] We have used a similar approach to assign orbital slots to already qualified applicants in the domestic satellite service, see, e.g., Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service, 3 FCC Rcd 6972, 6972 (1988), and the direct broadcast satellite service, see, e.g., 47 C.F.R. § 100.13(b). See also Amendment of Parts 2 and 22 of the Commission's Rules to Allocate Spectrum in the 928-941 MHz Band and to Establish Other Rules, Policies, and Procedures for One-Way Paging Stations

seek comment on this proposed general approach to allotments and assignments.

17. We also must decide how to assign particular channels to existing broadcasters. We explore two basic alternatives below and invite interested parties to comment on them or on any other options they wish to suggest.

1. Table of Allotments

18. The first assignment approach would be to formulate a Table of Allotments which not only allots ATV channels to each community, but also randomly matches particular ATV channels to existing NTSC channels listed on the table. The Table would thus consist of paired NTSC-ATV allotments designated for service to a given community. We are of the initial view that such random pairing of ATV and NTSC channels, in tandem with our proposed "use or lose" condition on construction permits, would promote early licensing and implementation of ATV, one of our underlying objectives in this proceeding. We tentatively find that this would be a practical, efficient and, under the circumstances, even-handed alternative for allotting particular ATV channels. Indeed, this approach effectively compresses two administrative steps, allotment to communities and pairing with particular licensees.[38] In addition, random pairing provides an equitable means of allotting particular channels. We seek comment on our initial view of this approach.

2. Allotment Table/First-Come/"Random Ranking"

19. A second option would be to follow a procedure of allotting ATV channels to a community and then assigning these channels to qualified ATV applicants. The first stage would entail formulating a Table of Allotments that would allot ATV channels to each community now listed in the Table of Allotments.[39] Next, we would permit existing NTSC licensees to apply for ATV channels in a given community on a first-come, first-served basis during an

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in the Domestic Public Land Mobile Radio Service, 89 FCC 2d 1337, 1355, on recon., 92 FCC 2d 631 (1982) and 93 FCC 2d 908 (1983). Cf. Amendments to the Television Table of Assignments to Change Noncommercial Educational Reservations, 59 RR 2d 1455 (1986), recon. denied, 3 FCC Rcd 2517 (1988) (authorizing intraband channel exchanges).

[38] Of course, existing broadcasters still must submit an application for a construction permit to use the paired ATV channel. Granting of this permit constitutes the official assignment. As discussed supra, Section II.C., we propose to permit existing broadcasters three years from the time of the pairing of ATV channels to submit their application for a construction permit.

[39] 47 C.F.R. § 73.606. In contrast to the option just above, this alternative would separate the administrative steps of allotment to community and assignment to a particular licensee. Such separation would allow us to resolve any requests for modification of allotments before actual assignments are made. This would eliminate the possibility of having to reassign channels if allotments were later modified.

initial filing "window".[40] As part of their ATV applications for construction permits,[41] broadcasters would be required to list available ATV channels in order of preference. If more than one broadcaster applied for the same channel as its first choice, we would use a random assignment procedure ("random ranking") that would rank applicants so that the top-ranked applicant would be granted its first choice, and the next-ranked applicant its highest choice that would not conflict with the first-ranked applicant, and so on. Broadcasters that had not filed in the first window would be able to apply after the random ranking on a first-come, first-served basis for those channels that were still available.[42] If no random ranking were held in a market, we would open a second window to permit remaining initially eligible applicants to apply on a first-come, first served basis. Any applications by existing NTSC broadcasters would have to be filed within three years from the time that the initial filing window opened.

20. We believe that this option would encourage ready, willing, and able applicants to apply early for ATV channels. It would also tend to maximize the possibility that applicants' preferences for particular ATV channels would be accommodated, and thus might minimize the possibility of challenges to awards and the delays that such challenges would cause. We seek comment on this proposed approach.

3. Supplemental private negotiations

21. We recognize that the foregoing methods may not always give applicants the particular ATV channels they desire. To accommodate applicants' preferences to a greater extent, we also propose to permit parties within the same market to negotiate among themselves after they have been awarded an ATV channel, on the condition that any proceeds from such an exchange would be used for operation of the station's ATV facility.[43] We

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[40] We have used this approach before, e.g., in the 220-222 MHz private land mobile service. Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Services, 6 FCC Rcd 2356, 2364 (1991).

[41] We recognize that technical specifications may vary among channels. We propose to require parties to amend their applications to supply appropriate technical data to conform with the specific channel they are ultimately awarded.

[42] We have used a first-come, first-served approach in the FM service when a window period closes without the filing of an acceptable application. Amendment of Sections 73.3572 and 73.3573 Relating to Processing of FM and TV Broadcast Applications, 58 RR 2d 776 (1985).

[43] Cf. Amendments to the Television Table of Assignments to Change noncommercial Educational Reservations, 59 RR 2d 1455, 1464 (1986), on recon., 3 FCC Rcd 2517 (1988), related appeal pending, Rainbow Broadcasting Co. v. FCC, No. 90-1591 (D.C. Cir. oral argument Sept. 30, 1991) (proceeds, if any, from noncommercial station's intraband exchange of channels with a

believe that such a negotiating process would be an economically efficient means of permitting licensees to effectuate their preferences. We also seek comment on whether we should permit those applicants awarded ATV channels within adjacent markets to negotiate channel changes, but not changes in communities of license, among themselves.[44] We also ask interested parties to comment on whether we would eliminate or mitigate any inordinate delay possibly resulting from such negotiations by adopting our proposed requirement, discussed above, that an ATV facility be built within two years after award of the construction permit.

4. Financial qualifications

22. Two of the important objectives underlying our approach to ATV implementation are (1) that the benefits of this new technology be made available to the American public as soon as possible and (2) that the spectrum we have earmarked for ATV be used as efficiently as possible. We believe that both of these goals would be furthered if we were to minimize the possibility of an ATV channel being assigned to a broadcaster who is incapable or unwilling to promptly begin construction of an ATV facility or diligently carry it to completion. Such warehousing, even under a "use or lose" condition, could result in a significant delay before the channel is reassigned to a viable applicant. Moreover, if we permit parties awarded channels in a community to negotiate among themselves for different assignments, we may unintentionally encourage the filing of speculative ATV applications. Such speculative applicants potentially could profit from trading channels desired by ready, willing, and able applicants.

23. We accordingly seek comment on whether we should adopt a financial qualification showing as a condition for awarding an ATV channel. Such a requirement could be imposed as a supplement to our establishing a deadline by which construction must be completed. We also seek comment on whether a financial showing should consist of an estimate of the cost of constructing and operating an ATV facility for three months, together with proof either of available assets sufficient to cover this estimate, or of a firm financial commitment from a lender sufficient to cover these costs. This showing would employ essentially the same standard now applied to applicants for new broadcast facilities.[45] Interested parties should also comment on whether such a requirement is likely to increase the time necessary to process applications for ATV construction permits, to the detriment of our goal of expediting delivery of ATV service to the public.

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commercial station should be used by noncommercial licensee in the operation of its station).

[44] For example, two stations in different communities may seek to exchange channels that are capable of being used in either community. Under our proposal, after an exchange, each station will remain licensed to serve its original community, but the channels assigned to them will be switched.

[45] FCC Form 301, Section III.

B. Assignment of a Channel

24. We expect that, for the most part, there will be sufficient spectrum for all ATV applicants. However, we recognize that a case conceivably may arise in which we cannot grant all initial eligible applicants an ATV channel assignment. In this event, there are several options we might pursue to determine which NTSC licensees would be entitled to an additional ATV channel.

25. First, in choosing among competing NTSC applicants, we might employ decisional criteria which would select those licensees capable of maximizing the number of households reached by the ATV signal or of bringing ATV service to the area most expediently. For example, we could use potential viewership or coverage area of the applicant's proposed ATV signal to determine entitlement to a channel. However, although this criteria would help bring ATV technology to the largest number of households, it would require projections of viewership or coverage area that might be difficult, if not impossible, to make or verify. An alternative strategy would involve combining a financial qualification rule, a first-come, first-served approach to awarding channels, and strict enforcement of the two-year period for constructing an ATV facility. Under this approach, an applicant demonstrating its financial ability to construct and operate an ATV channel[46] would be entitled to apply for a channel on a first-come basis. The financial qualification requirement and a "use or lose" condition on construction permits would confine applications to those entities capable of building an ATV facility immediately, thereby furthering our goal of hastening delivery of ATV service to the public.

26. The second major option for selecting among existing broadcasters competing for insufficient ATV spectrum would be to conduct a lottery pursuant to 47 U.S.C. § 309(i) to determine which applicants are entitled to a channel assignment.[47] In the unlikely event a spectrum shortfall develops, it will

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[46] See supra Section III.A.

[47] Section 309 (i)(1) of the Communications Act authorizes the Commission to use the lottery procedures set forth in the remainder of that Section in situations where "there is more than one application for any initial license or construction permit which will involve any use of the electromagnetic spectrum." 47 U.S.C. § 309 (i)(1) (1982).

We note for the sake of clarity that we are here proposing use of a lottery only to determine which existing broadcasters would obtain an ATV channel in the event of a spectrum shortfall. We are not here proposing to change the procedures that may apply to applicants for an ATV channel available after the initial assignment of ATV channels is made. See generally Amendment of the Commission's Rules to Allow the Selection from Among Competing Applicants for New AM, FM, and Television Stations by Random Selection (Lottery), 5 FCC Rcd 4002 (1990) (deciding to reform existing comparative hearing process in lieu of instituting lottery procedures for selecting among competing applicants for new AM, FM, and television stations).

probably be limited to major markets where numerous existing licensees will be vying for new ATV channels.[48] At that point, the Commission staff will already be hard-pressed to process channel assignments for all the other communities in the country where there is sufficient spectrum to accommodate all initially eligible applicants. Use of lotteries for markets where there is a spectrum shortfall would significantly speed the process of getting new ATV service to the public in those markets. Such cases would otherwise likely result in large, multiple-applicant comparative hearings which would cause lengthy delays, contrary to our goal of delivering ATV service to the public as quickly as possible. A lottery approach might thus be appropriate under these circumstances.[49]

IV. SPECTRUM ISSUES

A. Noncommercial Allotments

27. Our technical studies thus far indicate that, for the most part, we will be able to offer an additional 6 MHz of spectrum to existing stations for ATV without using vacant spectrum now reserved in specific communities for noncommercial stations. These studies show, moreover, that in the majority of cases, associating an additional 6 MHz ATV channel with these existing vacant noncommercial allotments will also be feasible.[50]

28. In addition, should problematic cases arise, it may be possible to engineer the ATV facility involved so as to permit an additional ATV

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[48] It is also possible that at the time of ATV conversion, see infra Section V, the elimination of NTSC broadcasts may also eliminate additional interference constraints and consequently make additional ATV frequencies available.

[49] See generally H.R. Rep. No. 97-765, 97th Cong., 2d Sess. 37 (1982).

[50] OET Technical Memorandum, FCC/OET TM89-1 (Dec. 1989), at 10-11, 65 and 66 (1989 OET Study). The studies conclude that with co-channel separations for ATV-ATV and ATV-NTSC stations of 100 miles, no UHF interference taboos, and 6 MHz of spectrum awarded on a non-contiguous basis, 96% of all "stations," including vacant noncommercial allotments, can be accommodated if we require adjacent channel stations to be separated by 60 miles or co-located; 99.6% of all "stations" can be accommodated if no adjacent channel separation is imposed. It also appears that the 4% of the new allotments that would violate 60-mile adjacent channel spacing would be located primarily in major markets with densely crowded frequency use, and where few, if any, vacant noncommercial allotments would exist. Increasing minimum co-channel separation distances beyond 100 miles conceivably decreases the number of vacant allotments that could be accommodated, however. For example, it is possible that such an increased separation could cause a "daisy chain" effect spreading from large, densely crowded markets to outlying regions, and which might eventually require deletion of a vacant noncommercial allotment in such an outlying region.

allotment for the facility while avoiding interference.[51] We tentatively find that these studies mitigate previously expressed concerns of public broadcasting interests that the noncommercial reserve will be used for ATV assignments.[52] We also tentatively find that we will generally be able to associate ATV channels with vacant noncommercial allotments for noncommercial use. Our tentative conclusions assume, of course, that the transmission system ultimately selected can function within the spacings ultimately adopted and will not require spacings equal to those in effect for NTSC today.[53] We seek comment on these tentative findings.

29. The Commission's spectrum planning policy has traditionally taken into account the important role noncommercial stations play and the financial constraints they face in constructing and operating stations.[54] Our technical studies lead us to believe that we can continue this tradition within an ATV allotment scheme. We propose to use the noncommercial reserve for ATV service only as a last resort. However, in the exceptional case where it may be necessary to use a vacant noncommercial allotment to allow present delivery of ATV service, we propose to do so. We seek comment on this proposal and on the particular circumstances, such as lack of any other available channels or the existence of a ready, willing and able ATV applicant, which might justify using a vacant noncommercial allotment. Similarly, in the few cases where it would be impossible to allot ATV spectrum to vacant noncommercial allotments without precluding delivery of ATV service by an existing eligible applicant, we propose to allow that existing eligible

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51 We believe that the 4% of new allotments that would violate a 60-mile adjacent-channel separation requirement may be able to avoid causing or receiving interference by using engineering techniques such as directional antennas, shorter effective antenna heights or terrain shielding.

52 See, e.g., Comments of the Corporation for Public Broadcasting and the National Association of Public Television Stations, MM Docket No. 87-268 (filed Nov. 30, 1988) at 15 (CPB 1988 Comments); Comments of the Public Broadcasting Service and the National Association of Public Television Stations, MM Docket No. 87-268 (filed Nov. 30, 1988) at 17.

53 Staff studies have assumed 100 mile co-channel spacings, and no UHF taboo spacings for ATV. These spacings are less than those in effect for NTSC today. 1989 OET Study, supra; 47 C.F.R. § 73.610 (current co-channel separation varies from 155 miles to 205 miles for UHF channels and from 170 miles to 220 miles for VHF channels, depending on which part of the country the stations are located in); 47 C.F.R. § 73.698 (current UHF taboo spacings of 20 to 75 miles).

54 See, e.g., Amendment of Section 3.606 of the Commission's Rules and Regulations, 41 FCC 148 (1952); Fostering Expanded Use of UHF Television Channels, 2 FCC 2d 527, modified on other grounds, 3 FCC 2d 506, 509 (1966) (reserving channels for noncommercial educational use).

applicant to use the spectrum for ATV.[55] We seek comment on this proposal.[56]

B. LPTV and Translator Services

30. Spectrum studies by the staff and the Advisory Committee confirm that it will be a challenge to provide 6 MHz of supplemental spectrum for ATV to all full-service licensees.[57] While the extent to which the assignment of these new ATV channels may displace LPTV and translator stations is not fully known, it is likely that LPTV and translator stations will be displaced to some degree in the major markets.[58] For this reason, and to minimize the potential disruption to LPTV and translator service, we have instituted a freeze on new low power station applications in major urban markets.[59] It is less clear, however, whether in rural areas -- where there are fewer, or maybe no full-service stations -- the advent of ATV will mean widespread

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[55] In no case, however, would we use a vacant VHF channel allotment reserved for noncommercial purposes for commercial ATV. See P.L. 101-515, the Departments of Commerce, Justice, and State, the Judiciary and Related Agencies Appropriations Act, 1991 (102 Stat. 2136-37, Nov. 5, 1990) (no funds appropriated to the FCC may be used to diminish the number of VHF channel assignments reserved for noncommercial educational television stations).

[56] We also observe that under the proposed implementation plan, new noncommercial station applicants would be able to petition for rulemaking for an additional ATV allotment after the ATV Table of Allotments is adopted and would be able to seek a channel assignment for such new allotment. They also could apply for an ATV assignment in the case where an ATV permittee forfeited its assigned channel by not constructing within the required time. See supra Section II.C.

[57] Interim Report: Estimate of Availability of Spectrum for Advanced Television (ATV) in the Existing Terrestrial Broadcast Bands, FCC/OET TM 88-1 (1988 OET Study); 1989 OET Study, supra; Preliminary Analysis of VHF and UHF Spectrum Scenarios -- Part III, Advisory Committee, Planning Subcommittee Working Party 3, Doc. 0174 (June 1991).

[58] A low power station is a broadcast television facility with secondary service status that is authorized at maximum power levels lower than those of full-service television stations. Low power stations may retransmit the programs of a full-service station and may originate programming. Translators are low-power stations that do not originate programming and act only to retransmit the signals of a full-service station. 47 C.F.R. § 74.701 (a), (f).

[59] Public Notice, Notice of Limited Low Power Television/Television Translator Filing Window From April 29, 1991 Through May 3, 1991, Mimeo No. 12124 (released March 12, 1991).

displacement of low power/translator stations.[60]

31. From the time we first authorized low power service, we stressed that we would permit low power service only as a secondary service, despite the public benefits flowing from the diverse, locally responsive programming it could produce. Thus, low power stations may not interfere with full-service stations, and must yield to new full-service stations.[61] Although low power interests have argued that displacement of LPTV stations by ATV would contravene the Communications Act by reducing diversity, diversity is not the only criterion that we are bound to consider, or indeed, did consider when we authorized the low power service.[62] One of the other factors leading us to accord secondary status to the low power service was the spectrum demands of competing services, precisely the decisional factor motivating us today.[63] In addition, contrary to the arguments of low power interests,[64] displacement by a new ATV station would not violate the first amendment rights of LPTV licensees.[65]

32. We thus propose no change to the secondary status of LPTV and translator stations. They must yield to new ATV operations just as they would be required to yield to existing full-service operations. As part of our concern for the industry's development, however, we have previously modified our rules to permit a low power station displaced by a full-service station to file an application for a vacant channel in the same area without being subject to competing applications.[66] We propose to continue to afford this

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60 At the inception of low power service, the Commission anticipated that the dearth of full service stations in rural areas, together with our requirement that low power stations protect the Grade B contours of all full-service stations, would result in most low power stations locating outside the top 50 markets. An Inquiry Into the Future Role of Low-Power Television Broadcasting and Television Translators in the National Telecommunications System, 51 RR 2d 476, 505 (1982) (Low Power Service Order), recon. granted in part on other grounds, 53 RR 2d 1267, recon. denied, 95 FCC 2d 657 (1983), aff'd sub nom. Neighborhood TV Company, Inc. v. FCC, 742 F.2d 629 (D.C. Cir. 1984).

61 Low Power Service Order, 51 RR 2d at 484, 486; 47 C.F.R. § 74.702(b).

62 Comments of Channel America LPTV Holdings, Inc., MM Docket No. 87-268 (filed Nov. 30, 1988) at 4-5 (Channel America Comments).

63 Low Power Service Order, 51 RR 2d at 481.

64 Channel America Comments at 4-5, 8-9.

65 See National Broadcasting Co. v. United States, 319 U.S. 190 (1943) (first amendment rights of applicant not abridged by denial of license on public interest basis); 47 U.S.C. § 307(b).

66 Low Power Television and Television Translator Service, 2 FCC Rcd 1278 (1987); 47 C.F.R. § 73.3572(a)(2).

special treatment to low power stations displaced by new ATV assignments. We seek comment on our proposed approach to any displacement of LPTV and translator stations by new ATV channels.

C. Broadcast Auxiliary Services

33. Broadcast auxiliary spectrum is used generally by television stations to convey their signals on a point-to-point basis from fixed or mobile facilities. Stations use this spectrum for such purposes as studio-to-transmitter links (STLs), and for ad hoc links between remote locations and the studio or transmitter.[67] We recognize that spectrum for auxiliary services associated with ATV will be limited because of the likely additional demand for such spectrum, at least in the early stages of ATV implementation, and because of the lack of readily available additional spectrum sources. We do not believe that additional spectrum should be made available for ATV auxiliary use at this time. We expect that some existing broadcasters will be able to operate auxiliary services for their additional ATV channel within the currently allocated broadcast auxiliary spectrum.[68] We also anticipate that licensees will be able to take better advantage of digital compression and other techniques to make optimum use of current spectrum, and/or use fiber optic or cable links for auxiliary purposes.[69] If broadcasters come to air much of the same programming originally produced in ATV format over both channels,[70] this in turn may reduce the need for dual auxiliary frequencies; a single STL could transmit programming to the transmitter site, where the programming would be processed specially for NTSC transmission. For the foregoing reasons, we tentatively conclude that we should not propose any additional spectrum allocations for broadcast auxiliary purposes at this time and we seek comment on this tentative conclusion.

V. CONVERSION TO ATV

A. The Future Role of NTSC

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[67] See generally Advisory Committee, Planning Subcommittee, Fourth Interim Report at 5 (Planning Subcommittee Fourth Report).

[68] See generally Planning Subcommittee Fourth Interim Report at 12-14 (broadcast auxiliary spectrum is available in below top-30 markets if microwave paths carefully engineered, although scarcity is projected in top-30 markets).

[69] Planning Subcommittee Fourth Interim Report at 9-10. It is conceivable, for example, that digital compression techniques may be developed so that a single microwave channel can be used as an STL to transmit both an NTSC and an ATV program. It is also conceivable that cable or fiber optic links may be used for fixed, point-to-point transmissions, such as STLs or inter-city relays between stations.

[70] The issue of requiring simulcasting is discussed in Section VI, infra.

34. We envision ATV as an improved form of television that, if successful, will eventually replace existing NTSC. In order to make a smooth transition to this technology, we earlier decided to permit delivery of ATV on a separate 6 MHz channel. As we explained in the First Order, a "simulcast" system will transmit the increased information of an HDTV signal in a channel of a size -- 6 MHz -- equivalent to that used in the current television channel plan. We stated that this ultimately will minimize the amount of spectrum needed for HDTV service, once the eventually outmoded NTSC signal is surrendered.[71]

35. In order to continue to promote spectrum efficiency, we intend to require broadcasters to "convert" entirely to ATV -- i.e., to surrender one 6 MHz frequency and broadcast only in ATV once ATV becomes the prevalent medium.[72] We believe that such a policy will help foster the development of ATV, permit us to consider how the surrendered channels could best be put to use, and help maximize the coverage areas of ATV stations.[73]

36. Should an existing broadcaster have forfeited its initial eligibility for an ATV channel (for example, by not applying for or building an ATV facility within the requisite time), we propose to allow it to switch directly to an ATV channel at the time of required conversion if there is an available frequency or if it is technically possible to use its existing NTSC frequency for this purpose.[74] We also propose to cease issuing new NTSC licenses once we have completed the assignment of ATV channels to existing NTSC licensees. From that point forward, in order to begin effectuating the transition to ATV, we propose to issue new television broadcast licenses for ATV transmission only. In addition, once initial ATV assignments have been made, and spectrum is increasingly depleted, it will become progressively more difficult to make dual NTSC-ATV channel assignments. For this additional reason we believe it advisable to cease issuing NTSC licenses that, in order to have long-term viability, will have to be paired with an ATV frequency.[75] We seek comment on our proposed regulatory approach to the role of NTSC in implementing and converting to ATV.

B. Surrendering a Frequency

37. It is our tentative view that the public interest requires that we set a firm deadline or other triggering event for broadcasters to surrender

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71 5 FCC Rcd at 5628.

72 At this point, we intend to permit continued NTSC broadcasts only upon a showing of special circumstances.

73 The continued presence of NTSC stations necessarily limits the coverage area of ATV stations in the same vicinity in congested regions. See Section V.C. infra.

74 But cf. infra Section V.C.

75 See infra Section V.B.

their NTSC frequencies and convert entirely to ATV. Establishing a definite point by which conversion must take place will provide clear notice of this transition to the broadcast industry, the viewing public, and other potential users of the spectrum to be relinquished. We seek comment on this tentative conclusion, as well as on the underlying assumption that there may be other, superior uses for the spectrum to be surrendered.

38. We now consider how we should establish the date by which broadcasters must surrender one 6 MHz channel. In fixing an appropriate ATV conversion date, we are most concerned that sufficient numbers of consumers purchase ATV receivers by that point so as to justify discontinuance of NTSC broadcasts. In this regard, we note that the Advisory Committee is currently studying projected ATV receiver penetration rates.[76] Such studies are also taking into account the time and cost involved for broadcast stations to convert fully to ATV.[77] We ask interested parties to comment on the preliminary work done by the Advisory Committee on the conversion issue thus far, and to submit any additional or supplemental penetration analyses they believe are appropriate.

39. We believe that there are several ways in which a conversion date for ATV could be selected. One option would use achievement of a specific nationwide penetration rate (defined as a percentage of households with ATV receivers) as the triggering event for ATV conversion, with all broadcast stations being required to convert to ATV transmission within a certain period

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[76] See, e.g., Fourth Interim Report of the Working Party 5 on Economic Factors and Market Penetration of the Planning Subcommittee of the Advisory Committee on Advanced Television Service (Mar. 4, 1991), at 8 (PS WP5 Market Penetration Report). The report states that the Chairman of Working Party 5 believes that an "optimistic" view of ATV penetration -- i.e., 40% penetration 10 years after 1% penetration is reached -- is merited. In this view, "it remains likely that ATV home video players and ATV cable service will in fact precede the introduction of ATV terrestrial broadcasting, and even seed the market to the one percent penetration point before the ATV terrestrial service in inaugurated." PS WP5 Market Penetration Report at 7-8.

[77] The PS WP5 Market Penetration Report at 6. The report cites both a PBS study (projecting a cost for an ATV facility ranging from a low $1.7 million for pass-through of network programming on a low-band VHF station, to $12.3 million for full program origination capability on a UHF station) and the CBS Study, supra, projecting a $1.5 million cost for network pass-through and $11.6 million for total transmission/studio facility for the first stations that construct, and $741,000 for network pass through and $6.9 million for total plant construction for the last group of stations that move to ATV. CBS projects that the $11.6 million investment for the first 30 stations in the largest markets serving 31% of television households will occur over a period of five years. The CBS Study projects that the cost for stations in smaller markets starting construction of ATV facilities four years later, would fall to less than $8 million. See generally PBS Engineering: Preliminary HDTV Estimates (Oct. 1990) (PBS Study), Attachment C to Implementation Subcommittee, Fourth Report, supra; CBS Study, supra.

of time (for example, three years) after a particular penetration rate was achieved. We seek comment on what the specific penetration rate should be under this option, and at what point after that rate is achieved we should require full-scale conversion to ATV.

40. We recognize, however, that use of a nationwide penetration rate as a conversion point for ATV conceivably may pose a hardship to stations in smaller or less affluent markets. In such cases, there might be fewer financial resources to permit either consumers to purchase receivers or stations to construct and equip an ATV facility. Indeed, the CBS study suggests that many stations in smaller markets will take longer to begin building and longer to finish constructing an ATV facility than major market stations.[78] We thus seek comment on whether we should modify the first option to require conversion for ATV only after a specific penetration rate is achieved on a market-by-market basis. Such an option would appear to better calibrate consumers' readiness to convert to ATV, and would probably result in stations in larger markets converting more quickly than those in smaller markets. On the other hand, such piecemeal conversion might adversely affect the availability of network or other nationwide ATV programming. Interested parties are invited to address the relative advantages and disadvantages of such a market-by-market approach. Comment is also solicited on what the appropriate penetration rate should be, and how we should assess when that rate has been achieved in a given market.

41. A final option would be to establish a firm date by which one frequency would have to be surrendered and the conversion to ATV completed. Such a date in itself would allow sufficient time for consumers to purchase new ATV receivers and adjust to this new transmission form. We believe that this option has the advantage of providing clear notice to licensees and to the public of the date by which conversion must take place. It would also be more efficient to administer than the other options discussed above because the Commission would not have to make determinations of nationwide or market penetration rates in scheduling alternative conversion dates. We seek comment on whether establishment of a date certain alone is an appropriate way to schedule ATV conversion, and if so, what factors and types of data we should take into account in setting the date, and what the specific conversion date should be.

C. Switching Frequencies

42. It is conceivable that, after a period of time, stations may desire to switch their new ATV operations to their original NTSC channels.[79] Based on preliminary staff studies, it appears that ATV allotments may have spacing between ATV and NTSC co-channels shorter than spacing between ATV-ATV

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78 CBS Study at 17 & Figures 11 and 12.

79 For example, a station's service area on its ATV frequency may be smaller than its NTSC service area. If ATV receiver penetration becomes very high, the station may desire to use the NTSC channel to expand its ATV service area and sacrifice some NTSC coverage.

co-channels and NTSC-NTSC co-channels.[80] This technical constraint poses problems for a station switching its NTSC to its ATV channel and vice versa, unless all stations with co-channel facilities at less than the minimum ATV-ATV spacing distance in a given area switch together. Switching ATV and NTSC frequencies otherwise may result in ATV stations with permanently much smaller service areas.[81] In light of this engineering limitation, we tentatively conclude that we cannot permit licensees to switch their ATV and NTSC channels on an individual basis, unless their ATV-NTSC separation is comparable to or greater than their ATV-ATV spacing prior to the switch. We seek comment on this tentative conclusion and on the analysis leading to it. We also ask interested parties to comment on whether, at the time of conversion to ATV, we should nevertheless permit licensees to switch their ATV and NTSC frequencies where they would still meet appropriate spacing requirements.

43. Another approach would be to require all broadcasters to switch back to their former NTSC channels at some future date or, alternatively, to require some broadcasters to switch to new channels so that all ATV operations are reaccommodated in the most spectrally efficient manner. For example, this second alternative might establish a single contiguous band for all ATV operations. This approach might simplify ATV receiver design and make

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[80] Staff studies (1) assume existing NTSC-NTSC co-channel separations; (2) demonstrate that there is some flexibility to make ATV-ATV co-channel separation about 150 miles without significantly affecting the number of stations that can be accommodated; and (3) conclude that ATV-NTSC separation is the critical factor in providing additional spectrum for ATV, and that to accommodate a high percentage of stations, a minimum ATV-NTSC separation distance of 100 miles appears necessary. See generally 1989 OET Study, supra, at 8, 11-2 & Tables 4-H, 5-H; 47 C.F.R. § 73.610.

[81] Staff studies make certain assumptions about the technical capability of ATV signals with respect to co-channel NTSC signals. They assume that an ATV signal spaced at 100 miles from an NTSC co-channel can be designed to be relatively "benign" relative to an NTSC co-channel, i.e., that NTSC viewers will be less affected by the presence of the ATV signal, than by another NTSC signal. The studies also assume that the ATV signal can be designed to be "robust" vis-a-vis an NTSC signal in that the ATV signal can exist with a 100 mile station separation distance from an NTSC co-channel without harmful interference from the NTSC signal. The studies do not focus on whether an ATV signal can be designed to be as "benign" and as "robust" with respect to co-channel effects from another ATV signal, however. Thus, if a station switches its ATV and NTSC frequencies with the result that its ATV frequency is now spaced less than the necessary distance from another ATV co-channel facility, the station's ATV facility might not be immune to unwanted interference effects from another ATV co-channel, as it would be for interference from an NTSC station. This increased interference potential would result in permanently smaller service areas for some ATV stations. On the other hand, if all stations converted to only their ATV-assigned frequencies, and NTSC operations ceased, any limitations placed on ATV coverage areas by the existence of the NTSC stations would be removed. Assuming no other uses for the NTSC spectrum, ATV coverage areas could increase.

contiguous spectrum available for other uses.

44. We recognize, of course, that either of these alternatives would require sizeable re-investment by stations that would have to switch their ATV transmission facility to a new frequency. We request information on the scope of the investment necessary to make such a change in frequency. We also ask interested parties to comment on the costs and benefits of these alternatives. Comment is also solicited on whether, under either alternative, we should adopt a standard for waivers to allow a licensee to remain on its originally assigned ATV frequency provided that this would not interfere with existing ATV channels.

VI. SIMULCASTING

45. As we have stated previously, it is in the interest of both the public and the industry to ensure that the transition to ATV is made as smoothly as possible. In particular, we believe we should protect the existing investment in consumer equipment during this transition period and take steps to ensure that consumers are not forced to purchase new television receivers in order to enjoy top quality, over-the-air television service. One means of achieving this goal would be to require a broadcaster to simulcast programs on both its NTSC and ATV channels.[82] By requiring that at least a minimum amount or percentage of programming broadcast on the ATV channel is also broadcast on the NTSC channel, simulcasting would help ensure that consumers with conventional NTSC receivers are not relegated to receiving inferior programming during this transition period. This requirement could serve as, or be coupled with, a requirement that stations over time provide a progressively higher minimum amount of service on their ATV channel. At the same time, we also believe that any approach we adopt should give broadcasters the flexibility necessary to ensure that the new ATV technology succeeds in the marketplace. We thus seek comment on whether, in principle, a simulcasting requirement would be a desirable means of protecting existing consumer investment in television equipment, or whether there are any other equally desirable means of achieving this same goal. If we do adopt a simulcasting requirement, we seek comment on the amount or percentage of ATV programming to be required, whether this amount should be adjusted as the conversion period progresses, and, if less than full time, on whether we should require that simulcasting occur at particular times, e.g., prime time or non-prime time.

VII. OTHER MATTERS

A. Patent Licensing

46. In light of the significance we ascribe to consumer acceptance of

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82 "Simulcast" is a contraction of "simultaneous broadcasting" and means the broadcast of one program over two channels to the same area at the same time. First Order, 5 FCC Rcd at 5629 n.1.

ATV technology,[83] we believe it appropriate at this juncture to address the issue of patent licensing, a question we believe is important to achieving high levels of receiver penetration. We expect that any proponent of an ATV transmission system selected as the nationwide standard will adopt a reasonable patent structure and royalty charging policy so that sufficient numbers of manufacturers will be able to produce ATV receivers and meet consumer demand.[84] In particular, we believe that any winning system, and its component parts as appropriate, may have to be licensed to other manufacturing companies in order to generate the supply volumes necessary for the service to develop. We seek comment on these patent licensing issues, and on the extent to which a proponent's patent licensing practices should be considered during the selection of an ATV transmission system.

B. Compatibility with Other Media

47. Until this point, we have considered implementation issues that bear on the use of ATV technology in the television transmission medium. However, this technology may have an impact on, or applications to, other media. ATV compatibility with other forms of transmission and applications would appear to be a desirable policy objective, provided that it does not unduly compromise other goals in this proceeding. To what extent can or should we encourage compatibility of a terrestrial broadcast ATV system with other media, including other video delivery media such as satellite transmission or video cassette recorders, and with computer applications and other forms of data transmission? The Committee for Open High Resolution Systems (COHRS), an informal ad-hoc group with members from the computer and telecommunications industries, government and academia, believes that an ATV standard should be interoperable,[85] extensible,[86] scalable,[87] and harmonious

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[83] See supra Section V.B.

[84] Cf. Public Notice, Revised Patent Procedures of the Federal Communications Commission, 3 FCC 2d 26 (1961). See also Amendment of Part 3 of the Commission's Rules and Regulations to Permit FM Broadcast Stations to Transmit Stereophonic Programs on a Multiplex Basis, 21 RR 1605, 1615 (1961); En Banc Letter from the FCC to Multiplex Development Corp., reprinted 21 RR 1616a (July 26, 1961). We also observe that the Advisory Committee ATV Test Procedures Test Management Plan, Section 2.1 addresses this matter and references the Patent Policy of the American National Standards Institute in connection therewith.

[85] Interoperability refers to ease of conversion between different media and between different applications. Selected Issues: Interoperability, Extensibility, Scalability, and Harmonization of HDTV and Related Standards, Comments to the FCC prepared by COHRS (May 7, 1991) (COHRS Letter).

[86] Extensibility refers to the ability to adapt to innovation and to uses requiring a higher quality signal and more information transmission. COHRS Letter, supra.

with standards for other applications.[88] We seek comment on the desirability of these qualities in an ATV system and on the importance of an ATV system's overall ability to interconnect with other applications and delivery systems.

VIII. PROCEDURAL MATTERS

A. Notice and Comment Provisions

48. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments on or before December 20, 1991, and reply comments on or before January 20, 1992. To file formally in this proceeding, you must file an original plus five copies of all comments, reply comments, and supporting comments. If you want each Commissioner to receive a personal copy of your comments, you must file an original plus nine copies. You should send comments and reply comments to Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the Dockets Reference Room of the Federal Communications Commission, 1919 M Street, N.W., Washington, D.C., 20554.

B. Ex Parte

49. This is a non-restricted notice and comment rulemaking proceeding. Ex parte presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in the Commission rules. See generally 47 C.F.R. §§ 1.1202, 1.203, and 1.206(a).

C. Regulatory Flexibility Act Statement

50. As required by Section 603 of the Regulatory Flexibility Act, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the expected impact on small entities of the proposals suggested in this document. The IRFA is set forth in Appendix A. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments on the rest of the Notice, but they must have a separate and distinct heading designating them as responses to the Initial Regulatory Flexibility Analysis. The Secretary shall send a copy of this Notice of Proposed Rule Making, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 603(a) of the Regulatory Flexibility Act. Pub. L. No. 96-354, 94 Stat. 1164, 5 U.S.C. § 601 et seq

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[87] Scalability refers to the creation of pictures by use of subsets of coded bits so that different quality pictures can be produced depending on the type of processors used. COHRS Letter, supra.

[88] Harmonization would permit receivers to be multistandard devices, capable of processing video formats from a variety of different sources. COHRS Letter, supra.